US009637030B2

(12) **United States Patent**
Seibold et al.

(10) **Patent No.: US 9,637,030 B2**
(45) **Date of Patent: May 2, 2017**

(54) **VEHICLE SEAT WITH A LUMBAR SUPPORT**

(71) Applicant: **Johnson Controls Technology Company**, Holland, MI (US)

(72) Inventors: **Kurt Seibold**, Whitmore Lake, MI (US); **Alexander I Balin**, Ann Arbor, MI (US); **Ingo Kienke**, Wermelskirchen (DE); **Jorg Linnenbrink**, Wuppertal (DE)

(73) Assignee: **Johnson Controls Technology Company**, Holland, MI (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/398,498**

(22) PCT Filed: **May 7, 2013**

(86) PCT No.: **PCT/US2013/039855**

§ 371 (c)(1),
(2) Date: **Nov. 3, 2014**

(87) PCT Pub. No.: **WO2013/169714**

PCT Pub. Date: **Nov. 14, 2013**

(65) **Prior Publication Data**

US 2015/0091345 A1 Apr. 2, 2015

Related U.S. Application Data

(60) Provisional application No. 61/643,587, filed on May 7, 2012.

(51) **Int. Cl.**
A47C 7/46 (2006.01)
B60N 2/235 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***B60N 2/235*** (2013.01); ***B60N 2/07*** (2013.01); ***B60N 2/0715*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC B60N 2/66; B60N 2/686
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,220,767 A 11/1965 Hendrickson
3,695,696 A 10/1972 Lohr et al.
(Continued)

FOREIGN PATENT DOCUMENTS

DE 893854 C 10/1953
DE 2152104 A1 4/1973
(Continued)

OTHER PUBLICATIONS

International Preliminary Report on Patentability for Application No. PCT/US2013/039855; dated Nov. 20, 2014.
(Continued)

Primary Examiner — David R Dunn
Assistant Examiner — Alexander Harrison
(74) *Attorney, Agent, or Firm* — The Dobrusin Law Firm, P.C.

(57) **ABSTRACT**

Vehicle seat (**1**), with a seat part (**2**) and a backrest (**3**), which comprises a lumbar support (**7**), wherein the lumbar support (**7**) has a lumbar apex (**7.1**) towards the back of a seat occupant and tapers from there and that the lumbar support comprises a suspension **9**, **11**, **12**) that results in load distribution with a primery load uptake (**8**. **1**) at the lumbar apex (**7.1**).

10 Claims, 3 Drawing Sheets